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Case Report

Rare case of combined laryngocoele masquerading as laryngeal carcinoma: a case report and review of literature

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ABSTRACT

Laryngocoele is an abnormal dilatation of the laryngeal saccule. It is a rare entity. Patient generally presents with hoarseness, dysphagia, dyspnea, foreign body sensation in throat and swelling in the neck. It is a benign condition, however the risk of malignancy is always associated with it, especially, if a patient is smoker or tobacco chewer. Once the diagnosis is established, laryngocoele are best treated by surgery. We present a rare case of combined laryngocoele in a 62 year old male patient, a chronic smoker, with history of recurrent swelling in neck right side for 2 years and hoarseness for duration of 1 month. It was a diagnostic dilemma as to what we were dealing with, a benign condition or malignancy. Eventually patient underwent excision by external approach. Resected specimen histo-pathological examination was consistent with laryngocoele. Post excision his normal voice was also restored.

Keywords: Combined laryngocoele, Saccular cyst, Malignancy, Hoarseness, External approach, Thyro-hyoid membrane

INTRODUCTION

A laryngocoele is an abnormal dilation of the laryngeal saccule that extends upward within the false vocal fold, above the level of thyroid cartilage, therefore they are supraglottic cysts.[1] It is lined by ciliated pseudostratified cylindrical epithelium with goblet cells. Laryngocoeles are generally filled with air when they retain a communication with the laryngeal lumen. When the neck of lumen gets obstructed, they become isolated from laryngeal lumen and get filled with secretions and present as a neck mass. Laryngocele can present with hoarseness, dysphonia, airway obstruction, difficulty in swallowing and neck mass.[2]

It is important to note that laryngocoele may concomitantly be harboring malignancy specially if a patient is of old age and is a smoker. In such conditions the examiner should perform a comprehensive head neck examination to asses for laryngeal malignancy.[3,4]

We report a case of combined laryngocoele in a 62 year old smoker, a diagnostic dilemma which eventually unfolded as a benign disease and its management, resulted in reversal of non-functional vocal cord and normal voice.

CASE REPORT

A 62-year-old male, a chronic bidi smoker, presented with complaints of right sided neck swelling for past 02 years and hoarseness over the last month. He gave history of reduction in size of swelling on manual compression from outside, resulting in foul smelling discharge per oral and halitosis. However, for last 06 months the mass has become non reducible with no expulsion of foul smelling

discharge. He denied any dyspnea, dysphagia, odynophagia, weight loss, or loss of appetite.

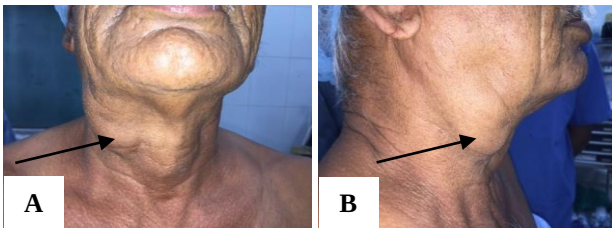

Figure 1 (A and B): Patient with soft swelling approximately 5 cm in diameter located in latero-cervical area (arrow).

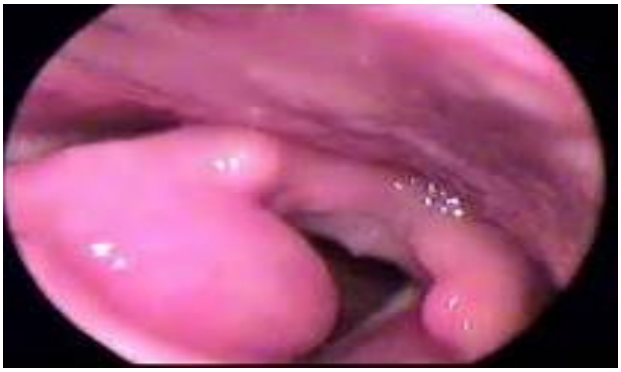

Figure 2: Fibreoptic laryngocopic view of endolarynx showing submucosal supraglottic swelling on right side with minimal airway compromise (arrow).

On examination, he was found to have a painless, soft cystic, non-fluctuant, non-pulsatile mass on the right side of neck, about 5 cm in size, conducting vibration during speech. The swelling was covered with normal skin. Clinically no neck nodes were palpable (Figure 1). Fibreoptic laryngoscopy showed a supraglottic submucosal swelling extending from the right lateral pharyngeal wall pushing the right ary-epiglottic fold and right false vocal cord medially. The view of right true vocal cord was obscured due to swelling of right false vocal cord. The right hemilarynx was apparently immobile with a phonatory gap resulting in breathy voice. But no airway compromise was seen (Figure 2).

A contrast enhanced computed tomography (CECT) scan neck showed a 6×4.2×3.1 cms well defined cystic lesion in right paraglottic space at the level of thyroid cartilage. No obvious contrast enhancement was noticed. It reached medially upto laryngeal ventricle, displacing the right false vocal cord medially and causing narrowing of airway. Laterally, it was extending through thyrohyoid membrane and extended upto medial border of sternocleidomastoid muscle. Medially it was pushing the epiglottis, right aryepiglottic fold, right paraglottic space and right false vocal cord medially, and mass stopped just above the level of right true vocal cords. There was no regional lymphadenopathy (Figure 3). Thyroid cartilage was normal in appearance. These findings favored the diagnosis of combined laryngocoele.

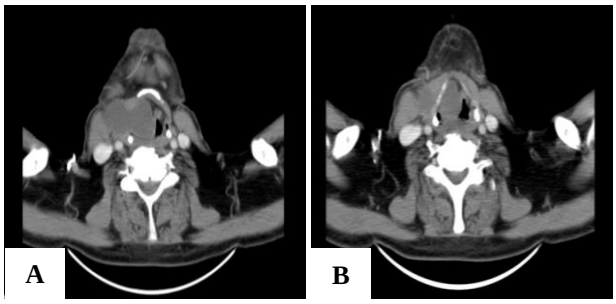

Figure 3 (A and B): Non enhancing well defined cystic lesion in right paraglottic space extending from laryngeal ventricle medially to medial border of sternocleidomastoid muscle laterally, displacing epiglottis, right aryepiglottic fold, right paraglottic space and right false vocal cord medially. Mass is stopping just above the level of right true vocal cords.

FNAC of the mass was done, which revealed dead and degenerating neutrophils and few histiocytes in a mucopurulent fluidy background. No atypical cells were noticed and diagnosis of necro-inflammatory lesion was given.

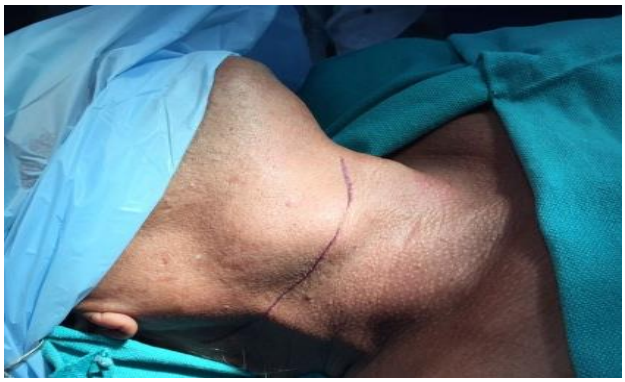

Figure 4: Incision taken from the midline upto the anterior border of SCM (R).

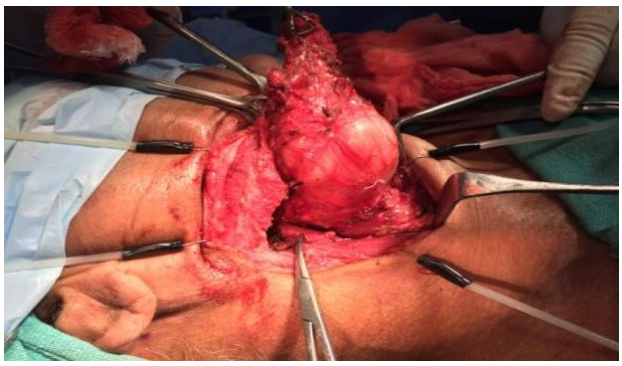

Figure 5: External component can be seen reflected from the SCM, External carotid artery and thyroid lamina (mosquito forceps pointing towards ECA).

Resection of the laryngocoele was performed by the external lateral cervical approach after awake intubation. A nasogastric tube was inserted for ease of identification of any breach in pharyngeal mucosa and subsequent nasogastric feeding post operatively. A transverse skin crease incision at the level of thyro-hyoid membrane from anterior border of sternocleidomastoid to the midline of neck was taken (Figure 4). Subplatysmal flaps were elevated to expose submandibular salivary gland and posterior belly of digastric superiorly, omohyoid muscle anteriorly and sternocleidomastoid muscle posteriorly. Using careful sharp and blunt dissection, a plane was a created between the cyst and adjacent structures (Figure 5 and 6). Superior thyroid (STA) and superior laryngeal arteries (SLA) were identified and SLA was ligated to avoid post op bleeding. Superior laryngeal nerve could not be identified.

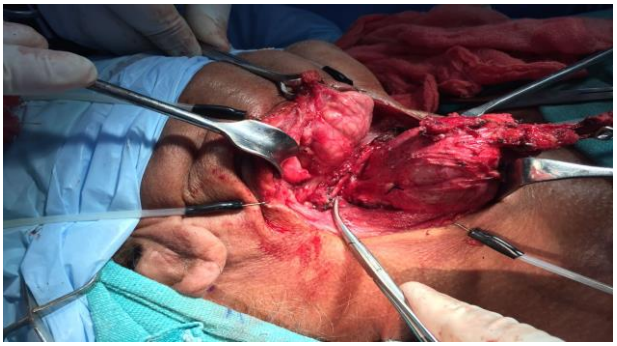

Figure 6: Submandibular gland reflected superiorly (mosquito forceps pointing towards hypoglossal nerve).

With gentle blunt dissection the thin walled swelling was freed from the perichondrium on the medial aspect of the thyroid lamina. The mass was extending to paraglottic space and was carefully delivered out (Figure 7). Followed by this the wound was inspected for tears or breaches in the mucosa. No breach in mucosa was noticed, which was confirmed by underwater seal check by performing valsalva and later by doing a check a direct laryngoscopy on table. Wound was closed in layers with a closed suction drain in situ. Post-operative recovery was uneventful (Figure 8 and 9).

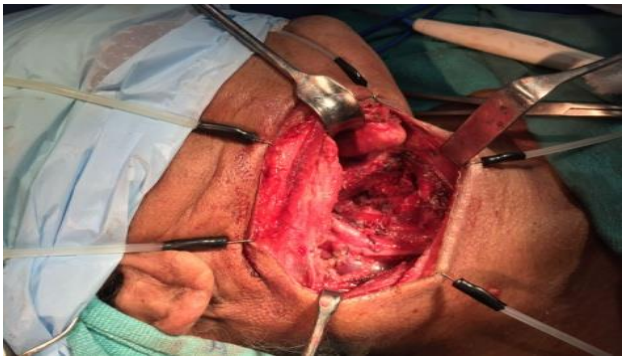

Figure 7: Laryngocoele removed by dissecting it out from the paraglottic space.

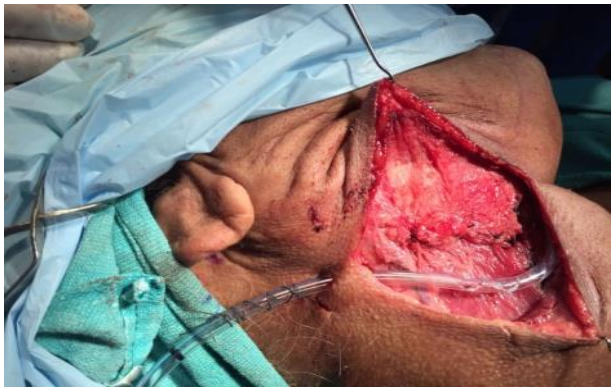

Figure 8: Closure of neck and placement of drain.

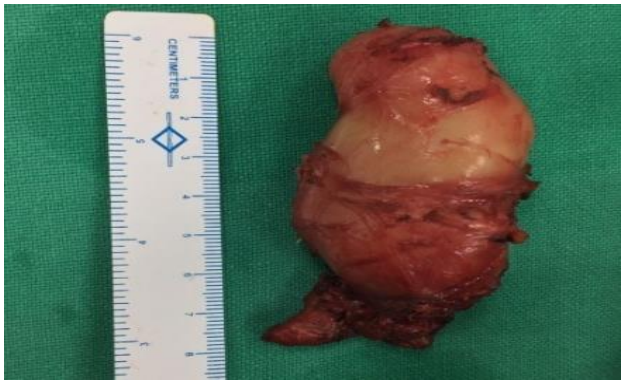

Figure 9: Resected specimen- the entire laryngocoele was excised in toto.

Post-operative videolaryngoscopy revealed normal mobility of right true vocal cord and patient regained his normal voice. The patient was discharged from hospital 5 days after surgery in good health. Swallowing of solid food was normal.

The final histological diagnosis was consistent with laryngocoele, with specimen showing a cyst lined by respiratory epithelium containing inspissated paucicellular proteinaceous debris. No dysplasia/ malignancy was noted.

DISCUSSION

Laryngocele is a rare condition characterized by benign abnormal dilatation of laryngeal saccule. It may be asymptomatic in a majority of patients, but can present with hoarseness, dysphonia, cough, airway obstruction, difficulty in swallowing and neck mass.[2] Virchow described the laryngocoele in 1867. The incidence is estimated to be 1 per 2.5 million of the population per year. It is five times more frequently seen in men, with a peak incidence in the sixth decade of life.[1] 85% of the laryngoceles are unilateral.[7]

Exact etiology of laryngocele still remains unclear. However, three main theories regarding its etiology are proposed: congenital factors, increased laryngeal

pressure, and mechanical obstruction.[8,9] Individuals like glass blowers, trumpet players are more prone for laryngocoele due to chronic increase in intraluminal laryngeal pressures leading to gradual dilatation of saccule.[10] Moreover, mechanical obstruction of the ventricle as a result of acquired laryngeal disease (carcinoma, chondroma, amyloidosis, and others) can cause increased intraventricular pressure and promote dilatation of the saccule.[11]

Classically laryngocoeles are classified into three types based on their anatomical location of internal laryngocoele (which remain within the larynx), external (lateral extension through the thyrohyoid membrane) and mixed type. Mixed type are the most common type occurring in 44% of the cases.[12] However, this classification has been modified as Internal and Combined. Exclusive external laryngocoeles cannot exist, as all laryngocoele originate from laryngeal saccule, therefore all will have an internal component. They are now categorized as internal or combined.[13] Laryngocoeles are usually filled with air till the time they retain their communication with the laryngeal lumen. They can be fluid filled or even pus filled (laryngopyocoele) when they become isolated from the laryngeal lumen due to obstruction at the neck of the lumen.

The clinical presentation can vary depending upon the anatomical location. Most of them are asymptomatic and are diagnosed when patient is evaluated for unrelated condition. Features of respiratory distress, foreign body sensation in throat, and hoarseness are more common in internal type. Patients with combined laryngocoele can present with a neck mass which is soft and may be reducible in size on palpation due to air escape into the larynx, in addition to features of internal laryngocoeles.

The differential diagnosis includes saccular cyst, branchial cyst, neck abscess and lymphadenopathy. It should be noted that saccular cysts usually present in younger age groups, do not communicate with the laryngeal lumen, and are usually filled with fluid.[6]

There is well documented evidence of association of laryngocoele with supraglottic carcinoma (approx 1%-10%).[3,4]

Essentially, laryngocoeles are diagnosed clinically. USG neck is also helpful to differentiate it from other neck masses. CT neck has become the initial radiographic modality of investigation for evaluation. It helps to distinguish the laryngocoeles from other cystic laryngeal pathology and any other neck swelling, as they can be seen as air filled or fluid filled lesions in para-laryngeal space or in lateral neck across the thyrohyoid membrane. It is also useful in identification of co-existing laryngeal carcinoma.[14] MRI provides detailed information on the boundaries of the air/fluid filled sac especially if there is suspicion of laryngomucocoele or laryngopyocoele. It also distinguishes between the obstructed mucus and inflammation from neoplastic disease.[14]

Apart of securing of airway, primary management of the laryngocoele is mainly surgical. The airway compromise is anticipated during induction of anesthesia which becomes a challenge as the induction can cause elastic, cystic expansile laryngocoeles to expand and cause air way obstruction. Fibreoptic awake intubation is a recommended alternative technique to achieve smooth induction and avoid tracheostomy in a case of large laryngocoele with anticipated airway compromise, as it was done in our case. Endolaryngeal approach by means of endoscopic CO_2 laser can be used for internal laryngocoeles.[15] For combined laryngocoeles external approach is indicated which may include one of the following- (a) Transthyrohyoid membrane approach, (b) thyrotomy for larger ones, with resection of upper 1/3 of thyroid cartilage, (c) V thyrotomy.[16] We employed external approach via thyro-hyoid membrane. The outcome of the surgery was satisfactory without any complications.

CONCLUSION

Laryngocoele is a rare benign laryngeal disease which is often asymptomatic. In our opinion, the present case is of particular interest since the patient was affected by a large laryngocoele unrelated to his profession. No predisposing factors for laryngocoele could be found in this patient. One of the most sinister etiology is laryngeal carcinoma, which was ruled out in this case. Awake intubation was done for this patient as airway compromise was anticipated. Adequate exposure of the lesion was achieved by external cervical approach and no complications were encountered in post-operative recovery period. The hoarseness due to mass effect of laryngocoele was reversed post-surgery and patient regained his voice.

The aims of presenting this rare case of combined laryngocele, are to emphasize the importance of thorough clinical examination, increase awareness amongst ENT surgeons about this entity, and to highlight the external surgical approach for excision, which provides excellent visualization and exposure without significant morbidity.

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REFERENCES

1. Holinger LD, Barnes DR, Smid LJ, Holinger PH. Laryngocele and saccular cysts. Annals Otol Rhinol Laryngol. 1978;87(5):675-85.
2. Dursun G, Ozgursoy OB, Beton S, Batikhan H. Current diagnosis and treatment of laryngocele in adults. Otolaryngol Head Neck Surg. 2007;136(2):211-5.

3. Mitroi M, Capitanescu A, Popescu FC, Popescu C, Mogoanta CA, Mitroi G, Surlin C. Laryngocele associated with laryngeal carcinoma. Rom J Morphol Embryol. 2011;52(1):183-5.
4. Harney M, Patil N, Walsh R, Brennan P, Walsh M. Radiology in Focus: Laryngocele and squamous cell carcinoma of the larynx. J Otol Laryngol. 2001;115:590-2.
5. Prasad KC, Vijayalakshmi S, Prasad SC. Laryngoceles-presentations and management. Indian J Otolaryngol Head Neck Surg. 2008;60(4):303-8.
6. Keles E, Alpay HC, Orhan I, Yildirim H. Combined laryngocele: a cause of stridor and cervical swelling. Auris Nasus Larynx. 2010;37(1):117-20.
7. Verret DJ, DeFatta RJ, Sinard R. Combined laryngocele. Ann Otol Rhinol Laryngol. 2004;113:594–6.
8. Amin M, Maran AG. The aetiology of laryngocoele. Clin Otolaryngol. 1988;13(4):267-72.
9. Canalis RF, Maxwell DS, Hemenway WG. Laryngocele--an updated review. J Otolaryngol. 1977;6(3):191-9.
10. Macfie DD. Asymptomatic laryngoceles in wind-instrument bandsmen. Arch Otolaryngol. 1966;83(3):270-5.
11. Celin SE, Johnson J, Curtin H, Barnes L. The association of laryngoceles with squamous cell carcinoma of the larynx. The Laryngoscope. 1991;101(5):529-36.
12. Cassano L, Lombardo P, Ragona RM, Pastore A. Laryngopyocele: three new clinical cases and review of the literature. European Arch Oto-Rhino-Laryngol. 2000;257(9):507-11.
13. Thomé R, Thomé DC, De La Cortina RA. Lateral thyrotomy approach on the paraglottic space for laryngocele resection. Laryngoscope. 2000;110(3):447-50.
14. Parsons CA, Chapman P, Counter RT, Grundy A. The role of computed tomography in tumours of the larynx. Clinical Radiol. 1980;31(5):529-33.
15. Devesa PM, Ghufoor K, Lloyd S, Howard D. Endoscopic CO2 laser management of laryngocele. Laryngoscope. 2002;112(8):1426-30.
16. Lancella A, Abbate G, Dosdegani R. Mixed laryngocele: a case report and review of the literature. Acta Otorhinolaryngologica Italica. 2007;27(5):255.

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